Exam Prep Document

Exam Format
- Very short answer
- Short answer
- Applying concepts: design and analysis
- Types of questions: Similar questions to reviews at beginning of lecture, e.g., vocabulary, comparisons, fix the code, explain the code, …; synthesizing concepts/content

What I expect from you
- **Be precise, clear in your answers.**
- To be comfortable with the terminology/vocabulary of web applications and software engineering to understand it when reading it and to use the appropriate terminology
- Know the what, why, and how of concepts (so I won't include this in each of the topics)
- Understand tradeoffs
- You can use bulleted lists or tables, as appropriate for the question.
- Make sure I know that you know what you're talking about.
- Do **not** need to know the Image sharing article or the Google search article

How to prepare
- Review lecture slides and readings
- Review assignments
- Practice reading and writing HTML, CSS, Servlets, JSPs, SQL queries, JDBC, JavaScript

Topics

WWW Architecture
- Components – Internet, clients, servers
- HTTP protocol
- Process of requesting a Web page

HTML5
- Terminology (elements, tags, attributes, content), components, syntax, purpose, rules

CSS
- Terminology (selector, properties, values), components, syntax, purpose, rules

Web application servers
- Handle requests (get, post)
- Return responses
- Servlet container
- Handling state
- Multi-threaded
- How different from web server

Java Servlets

- Important methods: init, doGet, doPost, destroy
- Sessions
- Session vs Request vs Context (Application) Attributes
- Parameters vs Attributes vs Init Parameters
- Maintaining state across multiple requests
- Organization

JSPs

- Syntax
- Organization with servlets

Quality Attributes

- How is web software different from other software?
- How do those characteristics change what constitutes "quality software" on the Web?

Version Control

- Benefits, limitations
- Software tools

JavaScript

- Syntax, rules
- Understanding code

Databases, SQL

- Why DB? Why SQL?
- Terminology – attributes/columns, rows, joins, queries
- Organization of tables, attributes, data types
- Common SQL statements, meanings

JDBC

- Why JDBC?
- How to connect
- Basic Syntax

Software Engineering

- Requirements gathering
- Static mock-ups
- Agile development

Software Engineering Tools

- Maven
- Jira

Usability

- Fundamental ideas
- Guiding principles
- Trunk test